




# Material Safety Data Sheet

NFPA	Transport Symbol
	

Preparation Date 08-Dec-2010

Revision Date 04-Nov-2011

Revision Number 2

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Code** 2121001  
**Product Name** ACETO TRIFLURALIN 4 EC HERBICIDE  
**Synonyms** Benzenamine, 2,6-Dinitro-N,N-Dipropyl-4-(Trifluoromethyl)- (9Cl); Alpha, Alpha, Alpha-Trifluoro-2,6-Dinitro-N,N-Dipropyl-P-Toluidine  
**Formula** C13H16F3N3O4  
**CAS Number** 1582-09-8 + 91-20-3 + Other Ingredients  
**EPA Registration Number** 2749-561  
**Contact**  
ACETO AGRICULTURAL  
CHEMICALS CORP.  
4 Tri Harbor Court  
Port Washington, NY 11050-4661  
Phone: (516) 627-6000  
Fax: (516) 627-6093  
Email: regulatory@aceto.com  
**ChemTrec Emergency Telephone Numbers** 1-800-424-9300  
1-703-527-3887

## 2. HAZARDS IDENTIFICATION

### Emergency Overview

May be harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes. May cause skin irritation. May cause irritation of the mucous membranes. May cause irritation of respiratory tract. May cause an allergic skin reaction.  
California Proposition 65 Carcinogens List. Limited evidence of a carcinogenic effect. Possible teratogen. (See section 11). Dangerous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Appearance** Orange.

**Physical State** Liquid.

**Odor** Solvent

**OSHA Regulatory Status**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

## 2121001 - ACETO TRIFLURALIN 4 EC HERBICIDE

**Mexico - Grade** Not available

### Potential Health Effects

**Principle Routes of Exposure** Eye contact, Skin contact.

#### Acute Effects

**Eyes** Irritating to eyes. May cause corneal injury. Redness. Avoid contact with eyes.

**Skin** May be harmful by skin contact. Substance may cause slight skin irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Redness. May cause drying and flaking of the skin. Avoid contact with skin.

**Inhalation** May be harmful by inhalation. May cause irritation of the mucous membranes. May cause irritation of respiratory tract.

**Ingestion** May be harmful if swallowed. Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia. Do not ingest.

**Additional Acute Effects** None reasonably foreseeable.

**Chronic Effects** California Proposition 65 Carcinogens List. Limited evidence of a carcinogenic effect. Possible teratogen. (See Section 11). Avoid repeated exposure.

See Section 11 for additional Toxicological information.

**Aggravated Medical Conditions** Not available

**Interactions with Other Chemicals** Not available

**Potential Environmental Effects** Dangerous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

**CAS Number** 1582-09-8 + 91-20-3 + Other Ingredients

**Formula** C<sub>13</sub>H<sub>16</sub>F<sub>3</sub>N<sub>3</sub>O<sub>4</sub>

#### Hazardous Components

Chemical Name	CAS-No	Weight %
Trifluralin	1582-09-8	30 - 60
Naphthalene	91-20-3	5 - 10

#### Non-hazardous Components

Chemical Name	CAS-No	Weight %
Other Ingredients	N/A	30 - 60

#### 4. FIRST AID MEASURES

<b>General Advice</b>	Show this safety data sheet to the doctor in attendance.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician or Poison Control Centre immediately.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Call a physician or Poison Control Centre immediately.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or Poison Control Centre immediately.
<b>Ingestion</b>	Do not induce vomiting without medical advice. Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Centre immediately.
<b>Notes to Physician</b>	Treat symptomatically
<b>Protection of First-aiders</b>	Use personal protective equipment. Avoid contact with skin, eyes and clothing.

#### 5. FIRE-FIGHTING MEASURES

<b>Flammable Properties</b>	Not available		
<b>Suitable Extinguishing Media</b>	Water spray. Carbon dioxide (CO <sub>2</sub> ). Dry powder. Foam. Water mist may be used to cool closed containers. Do not use a solid water stream as it may scatter and spread fire.		
<b>Unsuitable Extinguishing Media</b>	Do not use a solid water stream as it may scatter and spread fire.		
<b>Hazardous Combustion Products</b>	Thermal decomposition or combustion may produce hazardous gases and/or materials.		
<b>Explosion Data</b>			
<b>Sensitivity to mechanical impact</b>	Not available		
<b>Sensitivity to static discharge</b>	Not available		
<b>Specific Hazards Arising from the Chemical</b>			
Thermal decomposition can lead to release of irritating gases and vapours.			
<b>Protective Equipment and Precautions for Firefighters</b>			
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear			
<b>NFPA</b>	<b>Health 2</b>	<b>Flammability 1</b>	<b>Instability 1</b>

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing. In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Environmental Precautions</b>	Local authorities should be advised if significant spillages cannot be contained. Do not allow material to contaminate ground water system. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Should not be released into the environment.
<b>Methods for Containment</b>	Not available
<b>Methods for Cleaning up</b>	Evacuate personnel to safe areas. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains.
<b>Other Information</b>	Not applicable

## 7. HANDLING AND STORAGE

<b>Handling</b>	Use only in an area equipped with a safety shower. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation. Avoid breathing vapors or mists. Avoid contact with skin, eyes and clothing. Avoid repeated exposure. In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Storage</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers. Keep out of the reach of children.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	Ontario TWAEV	Mexico
Naphthalene	= 10 ppm TWA = 15 ppm STEL Skin - potential significant contribution to overall exposure by the cutaneous route	= 10 ppm TWA = 50 mg/m <sup>3</sup> TWA	= 15 ppm STEV = 78 mg/m <sup>3</sup> STEV = 10 ppm TWAEV = 52 mg/m <sup>3</sup> TWAEV	= 15 ppm STEL = 75 mg/m <sup>3</sup> STEL = 50 mg/m <sup>3</sup> TWA = 10 ppm TWA

**Engineering Controls**                      Ensure adequate ventilation, especially in confined areas.

### Personal Protective Equipment

**Eye/face Protection**                      Tightly fitting safety goggles.

**Skin Protection**

Protective gloves. Avoid gloves made of Polyvinyl alcohol (PVA). Long sleeved clothing. Preferred glove barrier material include: Chlorinated polyethylene. Neoprene. Nitrile rubber. Butadiene rubber. Polyethylene. Ethyl vinyl alcohol laminate (EVAL). Polyvinyl chloride. Viton. Acceptable glove barrier material include: Butyl-rubber. Natural Rubber.

**Respiratory Protection**

In case of insufficient ventilation wear suitable respiratory equipment.

Chemical Name	NIOSH IDLH
Naphthalene	= 250 ppm IDLH

**General Hygiene Considerations**

General industrial hygiene practice. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin, eyes and clothing. For environmental protection remove and wash all contaminated protective equipment before re-use. Wash hands before breaks and at the end of workday. For additional information consult the EPA Pesticide Label.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	Orange
<b>Physical State</b>	Liquid
<b>Odor</b>	Solvent
<b>pH</b>	(Aqueous 50/50)5.0
<b>Flash Point</b>	99°C / 210°F
<b>Method</b>	Pensky-Marten ASTM D 93
<b>Autoignition Temperature</b>	Not available
<b>Boiling Point/Range</b>	(Literature solvent) 232 - 275°C / (Literature Solvent) 450 - 527°F
<b>Melting Point/Range</b>	Not available
<b>Flammability Limits in Air</b>	<b>Lower</b> 1.8% (Estimated Solvent) <b>Upper</b> 11.8% (Estimated Solvent)
<b>Vapor Pressure</b>	(Literature solvent)<1 hPa @ 20°C
<b>Vapor Density</b>	4.7 (Literature Solvent, relative to air)
<b>Specific Gravity</b>	1.117 (Literature)
<b>Density</b>	1.117 g/cm <sup>3</sup> (Literature, Liquid)
<b>Water Solubility</b>	Emulsifies
<b>Reactivity in Water</b>	Not available
<b>Molecular Weight</b>	335.279 (Technical)

**10. STABILITY AND REACTIVITY**

<b>Chemical Stability</b>	Stable under normal conditions. Unstable at elevated temperatures.
<b>Conditions to Avoid</b>	Heat, flames and sparks. Elevated temperatures can cause material to decompose.
<b>Incompatible Materials</b>	Oxidizing agents.
<b>Hazardous Decomposition Products</b>	Carbon monoxide, Carbon dioxide (CO <sub>2</sub> ), Nitrogen oxides (NO <sub>x</sub> ), Hydrogen fluoride, Fluorinated hydrocarbons.

## Possibility of Hazardous Reactions

None under normal processing

<b>11. TOXICOLOGICAL INFORMATION</b>
--------------------------------------

**Acute Toxicity****Product Information**

**LD50 Oral:** >5,000(male)/4,013(female) mg/kg (rat)  
**LD50 Dermal:** > 2,000 mg/kg (rabbit) (male&female)  
**LC50 Inhalation:** > 7.74mg/L mg/kg 4H (male & female)

**Component Information**

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Trifluralin	= 1930 mg/kg Oral LD50 Rat		= 2800 mg/m <sup>3</sup> Inhalation LC50 Rat 1 h
Naphthalene	= 490 mg/kg Oral LD50 Rat	> 20 g/kg Dermal LD50 Rabbit	> 340 mg/m <sup>3</sup> Inhalation LC50 Rat 1 h

**Chronic Toxicity****Carcinogenicity**

A low incidence of urinary tract tumors was seen in only 1 of 5 chronic studies in rates with trifluralin (A.I.) Limited evidence of cancer in laboratory animals with Naphthalene. California Proposition 65 - Carcinogens List. [Naphthalene]. The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA	Mexico
Naphthalene	A4 - Not Classifiable as a Human Carcinogen	Monograph 82 [2002]	Reasonably Anticipated To Be A Human Carcinogen	Present	A4 - Not classifiable as a human carcinogen

**Irritation**

Not available

**Corrosivity**

Not available

**Sensitization**

May cause allergic skin reaction.

**Neurological Effects**

Not available

**Mutagenic Effects**

Not available

**Reproductive Effects**

Not available

**Developmental Effects**

The A.I. (Trifluralin) has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**Target Organ Effects**

Liver, Kidney, Blood, [Active Ingredient], //, Lungs, Gastrointestinal tract (GI), Thyroid, Urinary Tract.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Dangerous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Trifluralin

**Water Flea Data**

48 Hr EC50 water flea: 0.56 mg/L [Static]; 48 Hr EC50 Daphnia pulex: 0.56 mg/L [Static]

Naphthalene

**Freshwater Algae Data**

96 Hr EC50 Skeletonema costatum: 0.4 mg/L

**Microtox Data**

= 0.93 mg/L EC50 Photobacterium phosphoreum 30 min  
> 20 mg/L EC50 Pseudomonas putida 18 h

**Water Flea Data**

48 Hr EC50 water flea: 2.16 mg/L

**Persistence / Degradability** Not available

**Bioaccumulation / Accumulation** Not available

**Mobility in Soil** Not available

Naphthalene

log Pow = = 3.3 20 °C

**13. DISPOSAL CONSIDERATIONS**

**Waste Disposal Method** Contact waste disposal services. Dispose of in accordance with local regulations. Dispose of in accordance to EPA Pesticide Label Instructions.

**Contaminated Packaging** Dispose of in accordance with local regulations. Empty containers should be taken for local recycling, recovery or waste disposal. Dispose of in accordance to EPA Pesticide Label Instructions.

**US EPA Waste Number** See below

Chemical Name	RCRA
Naphthalene - 91-20-3	waste number U165

**14. TRANSPORT INFORMATION**

**DOT**

**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s

2121001 - ACETO TRIFLURALIN 4 EC HERBICIDE

---

**Hazard Class** 9  
**UN-No** UN3082  
**Packing Group** III  
**Reportable Quantity (RQ)** Trifluralin, RQ kg = 10.55814 Naphthalene, RQ kg = 648.5714  
**Description** UN3082,Environmentally hazardous substance, liquid,  
n.o.s.(Trifluralin,Naphthalene),9,PG III,RQ

**TDG**

**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s  
**Hazard Class** 9  
**UN-No** UN3082  
**Packing Group** III  
**Description** UN3082,Environmentally hazardous substance, liquid,  
n.o.s.(Trifluralin,Naphthalene),9,PG III,RQ

**MEX**

**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s  
**Hazard Class** 9  
**UN-No** UN3082  
**Packing Group** III  
**Description** UN3082,Environmentally hazardous substance, liquid,  
n.o.s.(Trifluralin,Naphthalene),9,III

**ICAO**

**UN-No** UN3082  
**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s  
**Hazard Class** 9  
**Packing Group** III  
**Description** UN3082,Environmentally hazardous substance, liquid,  
n.o.s.\*(Trifluralin,Naphthalene),9,PG III

**IATA**

**UN-No** UN3082  
**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s  
**Hazard Class** 9  
**Packing Group** III  
**ERG Code** 9L  
**Description** UN3082,Environmentally hazardous substance, liquid,  
n.o.s.\*(Trifluralin,Naphthalene),9,PG III

**IMDG/IMO**

**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s  
**Hazard Class** 9  
**UN-No** UN3082  
**Packing Group** III  
**EmS No.** F-A, S-F  
**Description** UN3082,Environmentally hazardous substance, liquid,  
n.o.s.(Trifluralin,Naphthalene),9,PG III

**RID**

**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s  
**Hazard Class** 9



**2121001 - ACETO TRIFLURALIN 4 EC HERBICIDE**

**UN-No** UN3082  
**Packing Group** III  
**Classification Code** M6  
**Description** UN3082,Environmentally hazardous substance, liquid, n.o.s.(Trifluralin,Naphthalene),9,III,RID  
**ADR/RID-Labels** 9

**ADR**

**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s  
**Hazard Class** 9  
**UN-No** UN3082  
**Packing Group** III  
**Classification Code** M6  
**Description** UN3082,Environmentally hazardous substance, liquid, n.o.s.(Trifluralin,Naphthalene),9,III,ADR  
**ADR/RID-Labels** 9

**ADN**

**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s  
**Hazard Class** 9  
**UN-No** UN3082  
**Packing Group** III  
**Classification Code** M6  
**Special Provisions** 274, 601  
**Description** UN3082,Environmentally hazardous substance, liquid, n.o.s.(Trifluralin,Naphthalene),9,III  
**Hazard Labels** 9  
**Limited Quantity** LQ7  
**Equipment Requirements** PP

**15. REGULATORY INFORMATION**

**International Inventories**

**U.S.A. (TSCA)** Does not Comply  
**Canada (DSL)** Does not Comply  
**EU (ELINCS)** Does not Comply  
**EU (EINECS)** Does not Comply  
**Japan (ENCS)** Does not Comply  
**China** Does not Comply  
**Korea (KECL)** Does not Comply  
**Philippines (PICCS)** Does not Comply  
**Australia (AICS)** Does not Comply

Chemical Name	U.S.A. (TSCA)	Canada (DSL)	EU (EINECS)	EU (ELINCS)
Trifluralin	-	Present	216-428-8	-
Naphthalene	T	Present	202-049-5	-
Other Ingredients	-	-	-	-

Chemical Name	Japan (ENCS)	China	Korea (KECL)	Philippines (PICCS)	Australia (AICS)
Trifluralin	3-426 3-0426	Present	KE-11942	-	Present
Naphthalene	4-311 4-0311	Present	KE-25545	Present	Present

**2121001 - ACETO TRIFLURALIN 4 EC HERBICIDE**

Chemical Name	Japan (ENCS)	China	Korea (KECL)	Philippines (PICCS)	Australia (AICS)
Other Ingredients	-	-	-	-	-

This material as a whole is exempt from the TSCA Inventory // FIFRA Regulated Pesticide

**USA**

**Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

**Chemical Name**

Trifluralin (CAS #: 1582-09-8)  
Naphthalene (CAS #: 91-20-3)

**SARA 311/312 Hazardous Categorization**

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**

This product contains the following HAPs:

**Chemical Name**

Trifluralin (CAS #: 1582-09-8)  
Naphthalene (CAS #: 91-20-3)

**Chemical Name**

Trifluralin  
Naphthalene

**EPA: CERCLA RQ**

= 10 lb final RQ  
= 4.54 kg final RQ  
= 45.4 kg final RQ

**Chemical Name**

Naphthalene

**TSCA Listing**

Section 4, 0.1 % de minimus concentration  
40 CFR 799.5115

**State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical Name	CAS-No	Category	Type
Naphthalene	91-20-3	carcinogen, initial date 4/19/02	carcinogen, initial date 4/19/02

**State Right-to-Know**

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Trifluralin	Carcinogen; Extraordinarily hazardous	sn 1918	Environmental hazard	Present	
Naphthalene	Present	sn 1322	Environmental hazard	Present	Toxic; Flammable

**Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**WHMIS Hazard Class**

Not determined

**16. OTHER INFORMATION**

<b>Prepared By</b>	Environmental Health and Safety, Regulatory Affairs
<b>Preparation Date</b>	08-Dec-2010
<b>Revision Date</b>	04-Nov-2011
<b>Revision Summary</b>	Not available

## Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of MSDS**